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ABSTRACT

This study was designed to demonstrate whether students attain a higher level of learning when they are required to synthesize information through a process of inquiry and believe they will be evaluated with essay questions. The control section of an introductory educational psychology class was taught about accommodating student differences, through the use of lecture, writing important terms on a blackboard, and allowing students to ask questions during the lecture period. The experimental section was taught the same material but through a process of guided inquiry. A comparative evaluation was conducted using an essay question and an attitude questionnaire. Analysis of the results showed that neither the essay nor the attitude measure revealed significant differences between the experimental and control classes. It was felt that this is because guided inquiry requires more instructional time than the lecture method, but both teaching methods were allotted equal time. Contains eight references. (GLR)

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Teaching Undergraduates to Think About Ways to Accommodate Student Differences Through Guided Inquiry

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Introduction

College teaching goes through reassessment and transformation as ideas change, particularly in the area of learning. If our goal is to encourage our students to think or problem solve, our methods should be conducive to thinking. Though various methods have been tested, and some found to be successful, lecture remains the most often employed method for imparting knowledge to college students (McKeachie, 1978). In the 1960's, along with the push for freedoms in many arenas, came a similar push for freedom in learning. Programs were begun which allowed the student to study on his own, or with very little traditional classroom time. These tended to be well suited to the applied student who could manage time, and studied diligently, but those students who would have done poorly in a traditional classroom also had difficulty with this newfound freedom (McKeachie, 1978). In the mid to late 1970's these programs fell by the wayside for the most part.

The result was that these programs are not in vogue currently, although studies have shown that students can learn as well, if not better, if they are allowed to

learn in a nonlecture situation. Jerome Bruner (1966) was one of the earliest proponents of allowing students to arrive at conclusions for themselves (e.g., Discovery Learning). If students arrive at their own conclusions, this would undoubtedly involve thinking on the part of the student. Bruner's idea was that students learn better when they have to think about what they are learning and work to learn. This same idea is supported by Jean Piaget's (1983) notion that students should experience disequilibrium, causing them to be curious about a subject, and therefore motivated to learn. Finally, Craik and Lockhart (1972), in their levels of processing theory, support the idea that information is learned better if it is processed at a deeper level. It stands to reason then, that information synthesized by the student would be better learned than complete information handed to the student in a lecture or handout. If information is handed to the student complete, it is assumed that the student is nothing more than a passive receiver (Katz, 1988). These basic assumptions were supported by research done with educational psychology students who were taught using a modified mastery approach, requiring the students do a majority of learning on their own (Lee & McLean, 1978).

It is generally accepted that the ability to respond to essay questions requires higher levels of learning than does the ability to respond to multiple choice questions. In a study by Meyers (1935) it was found that students varied the way they studied depending on what type of examination was expected. If essay questions were expected, the students attempted to learn concepts, and understand them to the point that they could be discussed. On the other hand, when multiple choice questions were expected, the students reported that they attempted to store as many facts and definitions as possible. It would seem that the former method would lead to a deeper understanding of the material and a greater ability to demonstrate higher levels of learning (e.g., application, analysis, synthesis, evaluation) (Bloom, Englehart, Furst, Hill & Krathwohl, 1956).

The purpose of the present study was to demonstrate that information about "Accommodating Student Differences When Teaching" would be learned better by undergraduate education majors if the students synthesized the information through a process of inquiry, and if students believed they would be evaluated with essay questions. Teaching in this manner exposes students to the process of inquiry which is

central to any field of science, including psychology, as well as imparts the necessary information for the unit being studied.

Procedure

The control section of an introductory educational psychology class was taught through the use of lecture, writing important terms on a blackboard, and allowing student questions during the lecture time. The experimentalsection, which was chosen from the two sections by coin toss, was taught through a process of guided inquiry. The experimental group was directed to draw their own conclusions about the accommodation of student differences within small groups. Both control and experimental classes were told the following statement at the beginning of the first class on the topic of accommodating student differences. "Some new methods will be used in teaching the unit on accommodating student differences." The only deviation from the usual way the control class was taught was that the differences among students were listed by the instructor on 18" x 24" pieces of paper and placed on the blackboard at the front of the room, rather than written on the chalkboard.

Two class periods were allotted for teaching this unit for both classes. For the experimental class, at the beginning of the first class the instructor divided the

class into five groups of approximately equal size. Each of these groups was given 18" x 24" sheets of paper and a black, wax marker. Four leading questions were written legibly on the blackboard at the front of the classroom. Groups were instructed to write down all of the student differences they could think of on the provided paper with the marker. The groups were asked to choose one member to keep track of the group's answers to each of the leading questions. At the end of the first class session the lists of differences were turned in to the instructor.

During the second class period the lists made during the previous class period were posted in the front of the room. Through class discussion, the lists were consolidated into one list. Differences were categorized according to results of the previous class period's brainstorming as to whether or not they can or should be accommodated for, and if so, some ways for which each difference can be accommodated. A chart was developed based on the results of this categorization. This chart was reproduced for the experimental class prior to the next meeting.

Three weeks after the completion of the unit on accommodating student differences, the essay question was administered, followed by the attitude questionnaire.

The essay question was as follows:

> There is a community that is so small that all of the children are taught in a one-room schoolhouse by one teacher, you. Discuss what student differences might be encountered, and how you, as a teacher, would attempt to accommodate for those differences. Also describe any methods of accommodation which would be best, but are not feasible in this situation, and why they are not.

The students in the control classes were also asked to answer these same questions. Two readers, familiar with educational psychology, were given the answers to the essay questions from each class, which were coded as to which class wrote them. The readers, blind as to the method by which the writer was taught, separately rank ordered the answers according to apparent understanding of the area of the accommodation of student differences within education. Higher rank indicated a better understanding. Mean ranks were determined for each class. It was hypothesized that the classes taught through guided inquiry would have a higher mean rank than the class taught with the traditional method.

An attitude questionnaire, which consists of five questions designed to assess the attitudes of the students with regard to the subject of accommodating student differences, contained the following questions:

1) My understanding of accommodating student differences, based on this course, is (limited to extensive)
2) I feel that I know enough about accommodating student differences to use this knowledge in my own teaching. (disagree to strongly agree)
3) How important is the topic of accommodating student differences to teaching? (unimportant to very important)
4) I believe that accommodating student differences should be taught as a part of every educational psychology course. (disagree to strongly agree)
5) How interested are you in learning more about accommodating student differences? (not interested to very interested)

It was hypothesized that the experimental group would inidcate a more extensive understanding of accommodating student differences, rate the accommodation of student differences as being more important, and more often indicate that they are likely to use the information learned in this

unit in their own teaching than will the control group. It was further hypothesized that the students in the experimental class would feel more strongly that accommodating student differences should be included in all educational psychology courses, and be more interested in learning more about accommodating student differences.

Neither the essay nor the attitude measure showed significant differences between the experimental and control classes. Within this study equal time was allotted for each teaching method. This could be responsible for the null effect because to be effective, guided inquiry needs more time. A second possibility for the lack of significance in this study is that the measures used were not sensitive to the subtle differences in thinking skills developed by the classes. The third reason for the null effect is that there actually is no difference in the effectiveness of the guided inquiry method and traditional lecture in the development of learning/thinking skills.

It is felt that the time factor played the largest roll in the lack of significant findings in this study. If this is the case, some implications must be considered. Considerations in implementing a teaching method such as this include the goal of the course or instructor, time allowed for each topic, and the suitability of the topic to

a method of guided inquiry. If the goal of the course or instructor is to increase thinking, problem solving, or the acquisition of conceptual knowledge, this method seems appropriate, but we must be willing to allow more time than one would for lecture, and therefore fewer topics can be adequately covered:

References

Bloom, B.J., Englehart, M.D., Furst, E.J., Hill, E.H., Krathwohl, D.R. (1956). Taxonomy of educational objectives: Handbook I, cognitive domain. NY: Longman.

Bruner, J. (1966). Toward a theory of instruction. Cambridge, MA: Harvard University Press.

Craik, F.I.M., & Lockhart, R.S. (1972). Levels of processing: A framework for memory research. Journal of Verbal Learning and Verbal Behavior, 11, 671-684.

Katz, J. & Henry, M. (1988). Turning professors into teachers. New York: Macmillan Publishing Company.

Lee, M.L. & McLean, J.E. (1978). A comparison of achievement and attitudes among three methods of teaching educational psychology. Journal of Educational Psychology, 72, 86-90.

McKeachie, W.J. (1978). Teaching tips: A guidebook for the beginning college teacher (7th ed.). Lexington, MA: D.C. Heath and Company.

Meyers, G. (1935). An experimental study of the old and new types of examination. Journal of Educational Psychology, 26, 30-40.

Piaget, J. (1983). Piaget's theory. In P. Mussen (Ed.), Handbook of child psychology (4th ed. Vol. 1). New York: Wiley.